

You Can Specialize in Radio

Another branch in which you receive a thorough training not only in assembling of radio sets but also in the principles of radio receiving and transmitting

THE School of Engineering has included instruction dealing with the science of wireless communication in its courses for many years. It was one of the pioneers in this particular phase of Electrical Engineering.

In the years of 1919 and 1920, the development of the vacuum tube broadened the field of radio telephony enormously. This important addition to the knowledge of wireless communication caused the science to develop most rapidly, and the ever-increasing popular and commercial demand for efficient radio apparatus taxed the ability of the country's finest engineers.

The policy of S. of E., ever since its inception, has been to improve and to enlarge the scope of its courses to meet the needs of the electrical industry. Accordingly, a complete course in Radio was included in the school's curriculum, when it became evident that radio had come to stay; that it had passed its experimental stages and was rapidly becoming a vital factor in the industrial and economic affairs of the Nation.

In outlining the course, particular stress has been laid upon the immense value of practical laboratory work. The principles learned in the classroom are most strongly impressed upon the student through the medium of practical work. S. of E. students "learn by doing."

The radio laboratory is particularly well equipped, and every effort has been made to secure the most modern apparatus and to keep the equipment up-to-date. In addition to this unusual opportunity to secure practical instruction, the students have the advantage of being in close contact with the 500-watt station WISN and the amateur station 9SO, both of which are owned and operated by the school.

Some of the first laboratory problems deal with the fundamentals of electricity. It is necessary that the trained radio expert be familiar with electrical tests, and so instruction is given in the measurement of electrical resistance by several methods; the use of the galvanometer; the measurement and calculation of condenser capacity, etc. Since magnetism plays an important part in the radio circuit, several experiments in magnetic phenomena are performed by the student. These include the mapping of magnetic fields, the magnetic effect of current carrying wires, and other experiments of a similar nature.

The condenser is one of the most important pieces of apparatus entering into the construction of radio

transmitting and receiving equipment. Its capacity, and therefore its effectiveness in the radio circuit, is determined largely by the dielectric used. Therefore, the S. of E. student tests the various materials commonly used as dielectrics and determines their relative values.

Another interesting phase of the laboratory work is the study of the various types of radio antennae. The student learns through experiment, the comparative values of each type, the advantages and disadvantages, the directional effects, methods of protection against lightning, etc.

Practical instruction in the methods of building and repairing receiving and transmission sets forms an important part of the laboratory work. The first problems in construction deal with the soldering and splicing of wire; the use of soldering equipment and the methods of making the various soldered joints used in radio equipment. After having completed these preliminary problems in construction, the student learns to lay out panels and is instructed in the

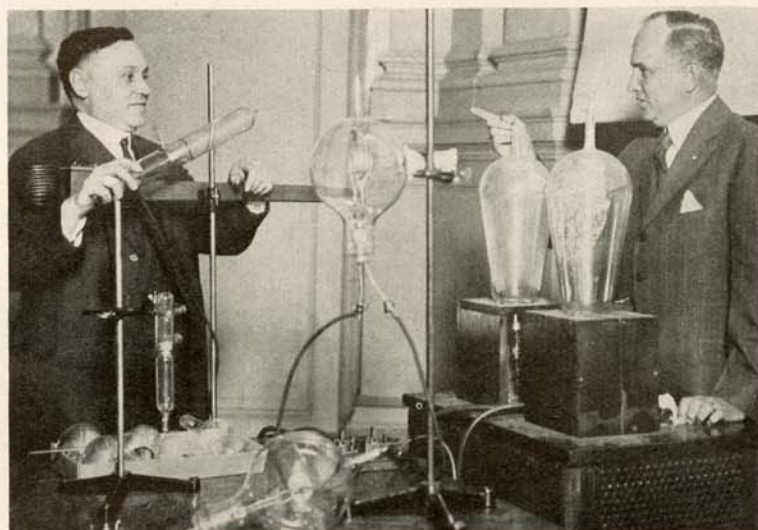
most approved methods of mounting the apparatus. Many radio receiving sets do not operate satisfactorily, simply for the reason that the equipment is not properly mounted, and that the separate pieces of apparatus do not bear the proper relation to each other.

The vacuum tube is the piece of apparatus to which we owe the phenomenal development of radio communication. To learn thoroughly the principle of the vacuum tube; the determination of filament and plate saturation curves is essential

to the student who wishes to master the fundamental principles of radio. The characteristics of vacuum tubes are therefore studied in detail. Special testing apparatus is available in the laboratory for this purpose.

In addition to the laboratory tests previously described, a thorough study is made of the various radio circuits, such as the regenerative and non-regenerative circuits, the neutrodyne and super-heterodyne circuits, and others. These circuits are constructed, tested and operated by each student.

The technical lectures are amply supplemented with work relating to the sales and merchandising phases of the radio industry. S. of E. not only offers a complete course in the technique of radio, but it also teaches a student the economics of the subject by giving instruction in the methods of building a successful business.



The Vacuum Tube has made this the Radio Age.